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ABSTRACT

An aerospace housing and shaft assembly comprising a housing, a shaft rotatably mounted within the housing, a seal assembly operatively positioned between the housing and the shaft, and low pressure air (e.g., atmospheric air) having a pressure substantially less than 14 psia and being positioned on one side of the seal assembly. The seal assembly includes a first seal ring mounted on the housing, and a second seal ring mounted on the shaft in facing relation to the first seal ring. One of the first seal ring and the second seal ring includes a hydropad. The hydropad is positioned to pump low pressure air from the inner diameter toward the outer diameter. The hydropads can include an inner edge oriented substantially circumferentially, an outer edge oriented substantially circumferentially and spaced radially outward from the inner edge, a leading edge interconnecting the inner edge with the outer edge, and a trailing edge interconnecting the inner edge with the outer edge.

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